

**New species of the genus *Celonites* Latreille (Hymenoptera: Masaridae)  
from South Africa.**

by

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**ABSTRACT**

Descriptions are given of four new species of southern African *Celonites* Latreille, namely *bergenwahliae* and *wahlenbergiae* from the Clanwilliam District of the western Cape Province and *dauidi* and *peliosomi* from Namaqualand.

**INTRODUCTION**

The writing of the present paper is occasioned by the need to provide names for three hitherto undescribed species of *Celonites* included in a paper on flower visiting by masarid wasps in southern Africa to be published shortly by S. K. Gess and F. W. Gess. The opportunity is taken to describe also a species for which no ethological data are as yet available. All four species belong to the assemblage termed by Richards (1962) the "Group of *C. wheeleri* Brauns" which includes all the known South African species of the genus and is characterized by the marked separation of the lateral lamellae of the propodeum from the median part of that body segment.

With the exception of one male paratype and one female paratype of each of the following three species, *C. bergenwahliae*, *C. peliosomi* and *C. wahlenbergiae*, deposited in the Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts, all the type material is in the Albany Museum, Grahamstown.

**TAXONOMIC DESCRIPTIONS**

***Celonites peliosomi* sp. nov.**

**FEMALE (Figs 1 and 3)**

*Black*; a spot on each side of face above ocular sinus and end of V-shaped raised frontal keel, very occasionally a small spot or streak on upper edge of each arm of frontal keel, posterior margin of pronotum, humeral angles, an elongate spot on each prepectus, base and apex of each tegula, almost entire upper and lower faces of propodeal lamellae, elongate wedge-shaped postero-lateral markings on tergites 1-5, sometimes a weakly defined median posterior triangular marking on tergite 5, small spots at distal ends of fore-femora and on proximal ends

of tibiae of all legs, *yellowish-white*; mandibles (other than at base), underside of antennal clubs, greater part of tegulae, hind margin of scutellum medially, metanotum medially, transverse bands between black basal bands and pale-coloured postero-lateral markings on tergites 1-5, sternites, most of tibiae and tarsi, *reddish-brown*.

Wings lightly browned.

Length 6,5-7,5 mm; length of fore wing 4,7-5,0 mm; hamuli 7.

Head (Fig. 1), pronotum, mesopleura, mesonotum, scutellum and dorso-lateral areas of propodeum coarsely and densely punctured; punctures on sides of pronotum, mesonotum, sides of scutellum and upper regions of mesopleura tending to form longitudinal striae.

Clypeus with a V-shaped raised keel which starts near but below antennal sockets and has its point on the midline a little below centre of disc; frons above antennae with a transverse V-shaped raised keel which starts in upper third of ocular sinuses and has its point on the midline at level of upper margin of antennal sockets.

Scutellum medially convex, strongly raised above level of mesonotum and with a wide crenulate anterior furrow.

Propodeal lamella (Fig. 3) of each side inclined at about 45 degrees to horizontal, narrow, bluntly pointed distally, with outer edge largely smooth and disc translucently punctured, separated from the median part of the propodeum by a proximally straight slit; median part of propodeum with ventro-lateral area bordering slit on each side markedly angled at edge and smoothly surfaced and shining, with angular tubercle situated dorsally on each side moderately strong and with general posterior surface (including concave declivity) longitudinally (vertically) striate.

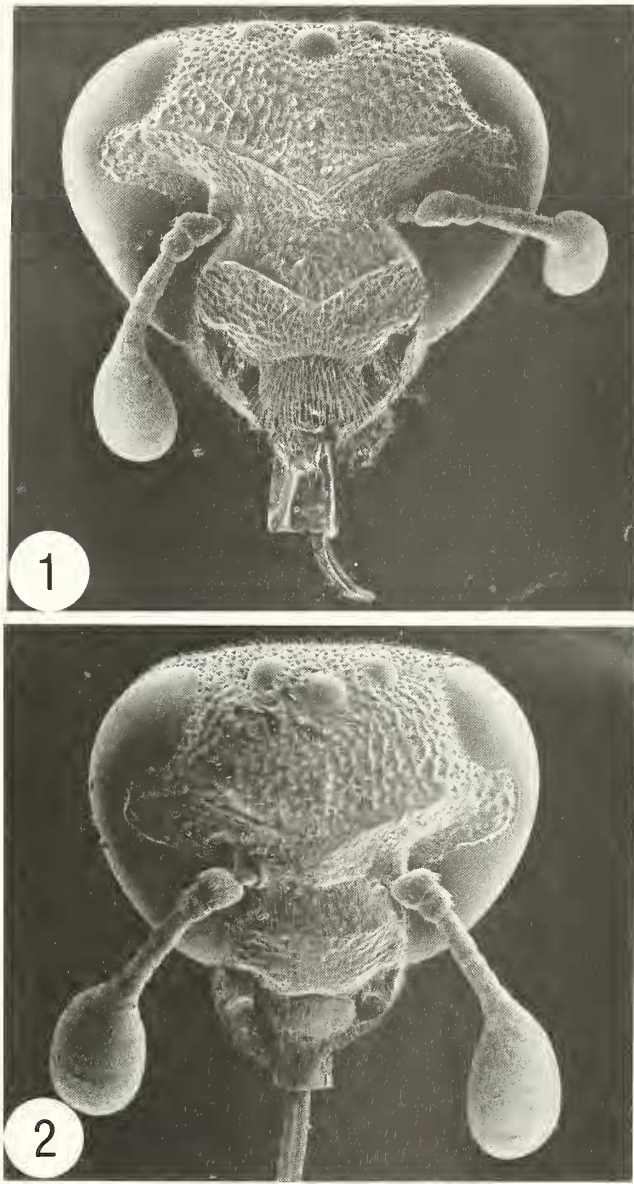
Gastral tergites closely, finely and somewhat superficially punctured, weakly shining, with their posterior margins mostly smooth; tergites 1-5 with at least some of the posterior outer angles (most commonly those of tergites 4 and 5) moderately projecting; tergite 6 with median part roundly produced, emarginate before sides. Gastral sternites shining; sides and postero-lateral corners of sternite 2, a broad transverse proximal band on and postero-lateral corners of sternites 3-5, and all of sternite 6 (excepting a smooth region along midline) with fine shallow punctures.

#### MALE (Figs 2, 4 and 5)

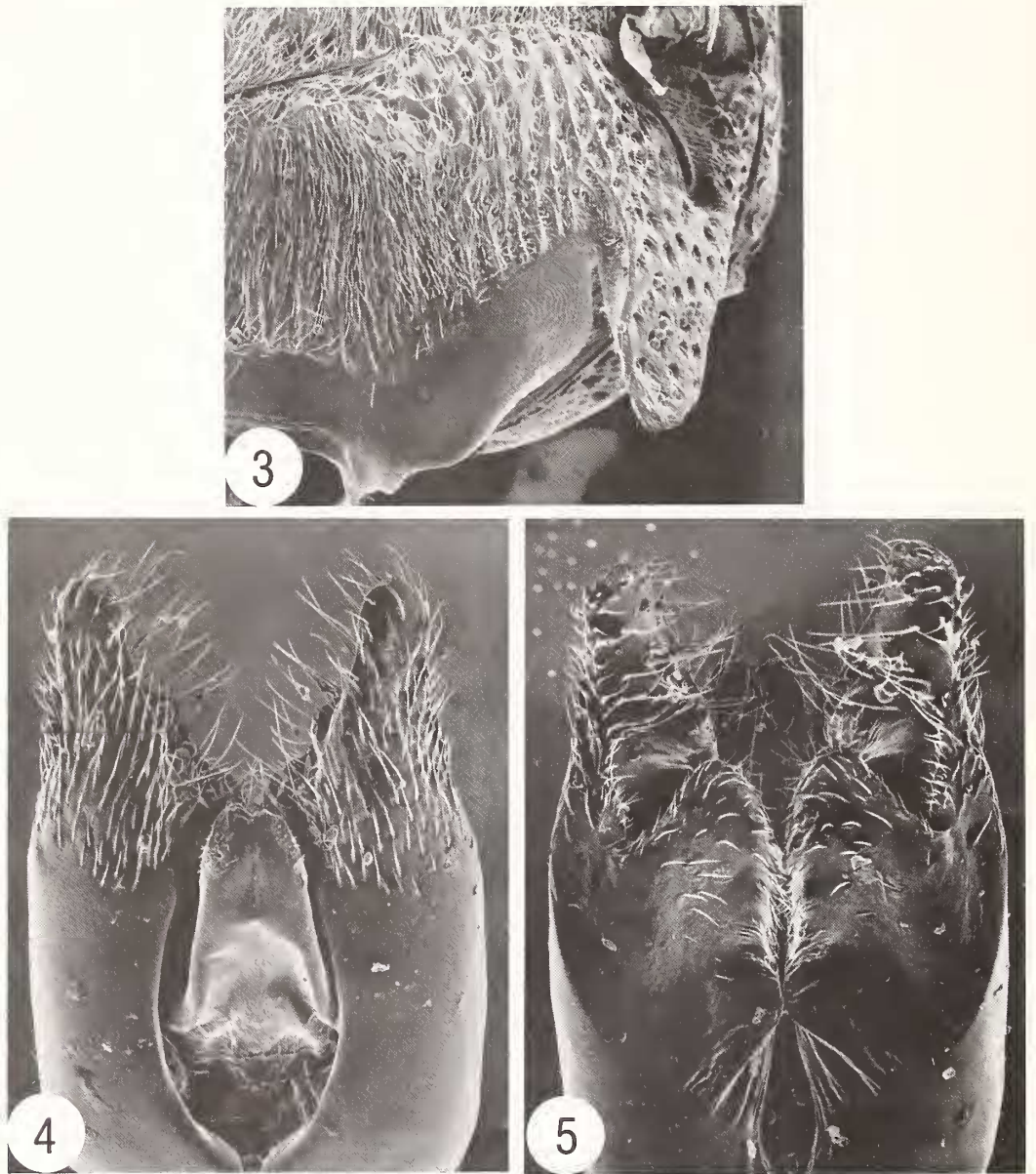
Colouration very similar to that of female differing only with regard to the *yellowish-white* markings on the head. These markings are: a large irregularly-shaped spot (absent in female) on disc of clypeus basally, a spot on each side of face within (not above as in female) ocular sinus; usually (not only occasionally as in female) a small spot or streak on upper edge of each arm of V-shaped frontal keel.

Length 7,2-7,6 mm; length of fore wing 4,4-4,7 mm; hamuli 6-7.

Structure much like that of female differing most noticeably with respect to the following: antennal club both longer and wider with individual segments less discernible and with three sensory depressions beneath; eyes closer below; clypeus narrower and with V-shaped raised keel almost obliterated, only its ends indistinctly indicated; frons with V-shaped raised keel weak medially; tergites with posterior outer angles more strongly projecting; tergite 7 compared to tergite 6 of female with median part much less rounded, subtruncate, and with lateral emarginations deeper (due to stronger development of posterior outer angles).



Figs 1 and 2. *Celonites peliostomi* sp. nov.: frontal view of head of female (Fig. 1) and of male (Fig. 2) (both  $\times 25$ ).



Figs 3, 4 and 5. *Celonites peliostomi* sp. nov.: dorsal view of right half of propodeum of female showing lamella (Fig. 3) ( $\times 65$ ); subdorsal view (Fig. 4) and subventral view (Fig. 5) of genitalia of male (both  $\times 100$ ).

Genitalia (Figs 4 and 5); parameres gently tapering towards their ends which are rounded and entire; they and volsellae with scattered fine hairs.

**MATERIAL EXAMINED:** Cape Province: Namaqualand, Springbok, Hester Malan Nature Reserve, 15–21.x.1987 (F. W. and S. K. Gess), Holotype female, Allotype male, 37 female Paratypes and 2 male Paratypes (all in flowers of *Peliostomum virgatum* E. Mey ex Benth., Scrophulariaceae); same locality, dates and collectors, 5 female Paratypes (all in flowers of *Aptosimum spinescens* (Thunb.) Weber, Scrophulariaceae); same locality, dates and collectors, 1 male Paratype (in flower of *Aptosimum lineare* Marl. and Engl., Scrophulariaceae); same locality, dates and collectors, 1 female Paratype (Malaise trap), same locality, 10–12.x.1988 (F. W. and S. K. Gess), 3 male Paratypes, same locality and dates (D. W. Gess), 1 male Paratype; [Cape Province:] Namaqualand, [Springbok] 2917 DB, Hester Malan N[ature] R[eserve], 30.x.1987 (M. Struck), 1 female Paratype (on *Peliostomum virgatum*).

**ETYMOLOGY:** The name, in the genitive singular, is formed from the generic name of the plant, *Peliostomum virgatum* E. Mey ex Benth. (Scrophulariaceae), in the flowers of which the wasp was most commonly found foraging for nectar or nectar and pollen, and serves to draw attention to the floral association.

*C. peliostomi* sp. nov. may be grouped with *C. capensis* Brauns and *C. humeralis* Richards in that the separation of the propodeal lamellae from the median part is by a deep, narrow, straight slit, not by a spiral slit ending in a circular emargination into which an extension of the median part of the segment projects strongly. However, in its possession of raised frontal and clypeal keels it is similar to *C. clypeatus* Brauns and *C. andrei* Brauns.

*Celonites wahlenbergiae* sp. nov.

**FEMALE** (Figs 6 and 10)

*Black*; a narrow band along posterior margin of pronotum, variably developed postero-medial spots on tergites 2–4 (and occasionally also in a reduced size on 5), *yellowish-white*; distal half of mandibles, most of pronotum, whole of tegulae, at least extreme hind margins of scutellum and metanotum laterally (occasionally greater part of scutellum and also middle of metanotum), occasionally outer portions of propodeal lamellae, most of tergites 1–3 and occasionally part of tergite 4, whole of sternite 1 and sides of sternites 2 and 3, extreme distal ends of femora and whole of tibiae and tarsi of all legs, *reddish-brown*.

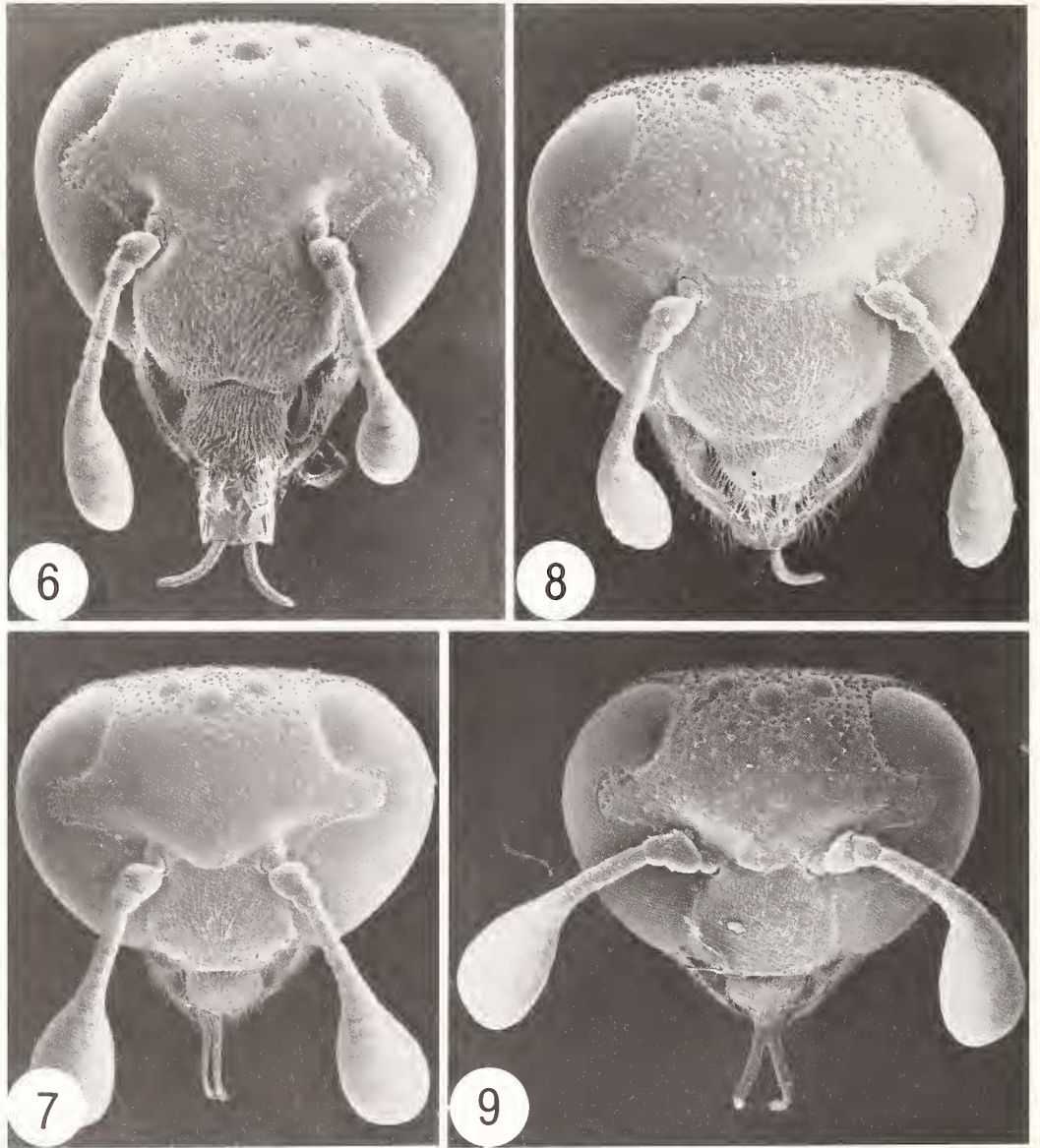
Wings lightly browned.

Length 7,3–8,3 mm; length of fore wing 4,7–5,3 mm; hamuli 7–8.

Head (Fig. 6) with puncturation of frons fine and very sparse on a microscopically longitudinally aciculate surface and contrasting with fine but denser puncturation on more strongly longitudinally aciculate to finely rugose surface of clypeus and moderate and dense puncturation of vertex. Pronotum, mesopleura, mesonotum, scutellum and dorso-lateral areas of propodeum coarsely and densely punctured; punctures on upper regions of mesopleura with a tendency to form not very noticeable striae.

Clypeus unmodified, its disc evenly convex and without any indication of a keel; frons with a feeble transverse prominence above antennae.

Scutellum medially convex, strongly raised above level of mesonotum and with a wide crenulate anterior furrow.



Figs 6 and 7. *Celonites wahlenbergiae* sp. nov.: frontal view of head of female (Fig. 6) and of male (Fig. 7) (both  $\times 25$ ).

Figs 8 and 9. *Celonites bergenwahliae* sp. nov.: frontal view of head of female (Fig. 8) and of male (Fig. 9) (both  $\times 25$ ).

Propodeal lamella (Fig. 10) of each side wide, broadly truncate distally, with outer edge gently convex, separated from the median part of the propodeum by an inwardly curving slit ending in a relatively large circular emargination; lateral projection of the ventral margin on each side of the median part of the propodeum with its hind edge transverse and its point narrowly rounded, as wide as long, and projecting across opening of curved slit at level of end of lamella.

Gastral tergites coarsely and densely punctured, with their posterior margins mostly smooth; tergites 1–5 with posterior outer angles moderately projecting; tergite 6 with median part roundly produced, very weakly emarginate before sides and with margin nowhere angular.

Gastral sternites shiny; sternite 2 with fine punctures scattered rather sparsely over surface; sternites 3–5 with close, moderate punctures in a broad transverse proximal band and on postero-lateral corners and with sternite 6 with similar punctures covering entire surface other than for smooth region along midline.

#### MALE (Figs 7 and 11)

Colouration similar to that of female, differing most noticeably in the basically black (not reddish-brown) pronotum, in the reduction in the amount of reddish-brown on the tergites, and in the greater extent of yellowish-white markings.

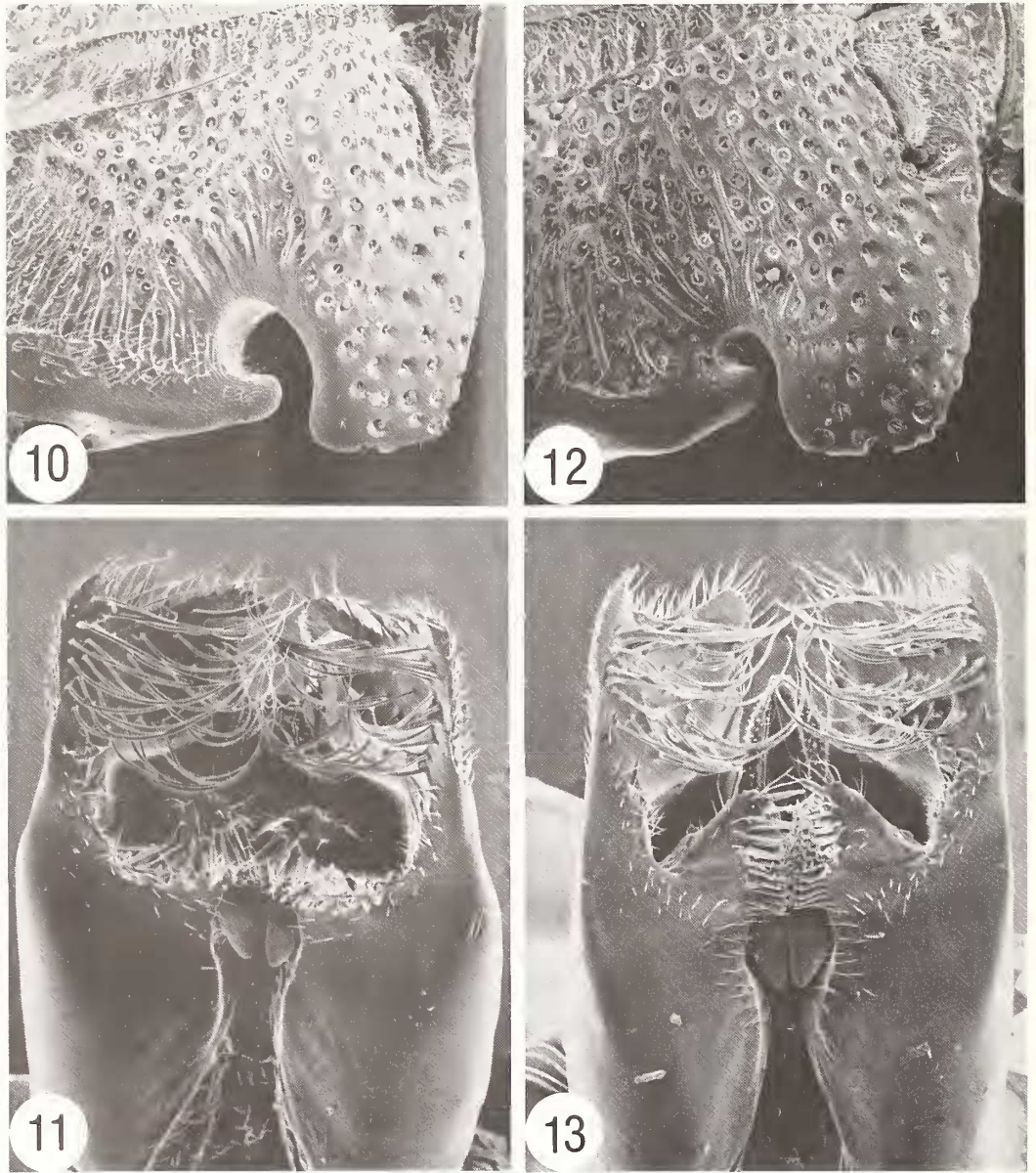
*Black*; whole of clypeus and labrum, occasionally a small median spot on face directly above clypeus, occasionally a spot within each ocular sinus or whole ocular sinus, an antero-medially expanded narrow band along posterior margin of pronotum and a spot on humeral angles (these markings occasionally meeting and fusing), occasionally a dot medially at apex of scutellum, postero-medial spots on tergites 1–5, *yellowish-white*; distal half of mandibles, whole of tegulae, usually extreme hind margins of scutellum and metanotum laterally, tergite 1 (other than anterior declivity), most of tergite 2, usually a postero-medial band on tergite 3 (i.e. usually not postero-lateral areas), whole of sternite 1 and antero-lateral areas of sternite 2, extreme distal ends of femora and whole of tibiae and tarsi of all legs, *reddish-brown*.

Length 6,5–7,3 mm; length of fore wing 4,2–4,8 mm; hamuli 7–8.

Structure much like that of female differing most noticeably with respect to the following: antennal club wider with individual segments less discernible and with three sensory depressions beneath; eyes closer below; clypeus narrower; frons with transverse prominence above antennae less feeble especially medially; tergites with posterior outer angles more strongly projecting; tergite 7 compared to tergite 6 of female with median part more widely rounded and with lateral emarginations much better developed (due to strong development of posterior outer angles).

Genitalia (Fig. 11); parameres wide and emarginate at their ends, furnished with long and strong inwardly directed curved hairs; each volsella with a subapical transverse band of short strong hairs; transverse hair bands on the right and left volsellae together forming a straight transverse band.

**MATERIAL EXAMINED:** Cape Province: Clanwilliam District, Clanwilliam Dam, 14.x.1987 (F. W. and S. K. Gess), 1 female Paratype (on ground) and 2 male Paratypes (in flowers of *Wahlenbergia* sp. A, Campanulaceae); same locality, 3–7.x.1988 (F. W. and S. K. Gess), Holotype female, Allotype male, 3 female Paratypes (1 in flower of *Wahlenbergia* sp. A, Campanulaceae) and 2 male Paratypes; same locality and dates (D. W. Gess), 4 female Paratypes and 6 male Paratypes; Clanwilliam District, 5 km W of Clanwilliam, road to Graafwater, 12.x.1987 (F. W. and S. K. Gess), 2 male Paratypes (on ground); same locality,



Figs 10 and 11. *Celonites wahlenbergiae* sp. nov.: dorsal view of right half of propodeum of female showing lamella (Fig. 10) ( $\times 65$ ); subventral view of genitalia of male (Fig. 11) ( $\times 100$ ).

Figs 12 and 13. *Celonites bergenwahliae* sp. nov.: dorsal view of right half of propodeum of female showing lamella (Fig. 12) ( $\times 65$ ); subventral view of genitalia of male (Fig. 13) ( $\times 100$ ).



5-6.x.1988 (F. W. and S. K. Gess), 1 female Paratype and 1 male Paratype; same locality and dates (D. W. Gess), 1 female Paratype and 3 male Paratypes.

ETYMOLOGY: The name, in the genitive singular, is formed from the generic name, *Wahlenbergia* (Campanulaceae), of the plants in the flowers of which the wasp was commonly found foraging for nectar or nectar and pollen, or near which the wasp was commonly found resting on the ground, and serves to draw attention to the floral association.

*Celonites bergenwahliae* sp. nov.

FEMALE (Figs 8 and 12)

*Black*; sometimes portions (especially medially) of a very narrow band along posterior margin of pronotum, sometimes variably developed but always insignificant postero-medial spots on tergites 2-4, *yellowish-white*; distal half of mandibles, whole or portions of a very narrow band along posterior margin of pronotum, whole of tegulae, extreme hind margin of scutellum laterally, middle of metanotum, usually outer portions of propodeal lamellae, most of tergites 1-3 and occasionally part of tergite 4, whole of sternite 1, most of sternite 2, postero-lateral corners of sternite 3, extreme distal ends of femora and whole of tibiae and tarsi of all legs, *reddish-brown*.

Wings lightly browned.

Length 7,5-8,2 mm; length of fore wing 5,0-5,3 mm; hamuli 7.

Head (Fig. 8) with puncturation of frons moderate and fairly close on a finely longitudinally rugose surface and contrasting with finer but denser puncturation on a more strongly longitudinally rugose surface of clypeus and coarser and denser puncturation on vertex. Pronotum, mesopleura, mesonotum, scutellum and dorso-lateral areas of propodeum coarsely and densely punctured; punctures on upper regions of mesopleura with a tendency to form not very noticeable striae.

Clypeus unmodified, its disc evenly convex and without any indication of a keel; frons with a feeble transverse prominence above antennae.

Scutellum medially convex, strongly raised above level of mesonotum and with a wide crenulate anterior furrow.

Propodeal lamella (Fig. 12) of each side wide, broadly truncate distally, with outer edge gently convex, separated from the median part of the propodeum by an inwardly curving slit ending in a relatively small circular emargination; lateral projection of the ventral margin on each side of the median part of the propodeum with its hind edge not transverse but directed anteriorly at 45 degrees and its point narrowly rounded and projecting across upper part of slit well anterior to level of end of lamella.

MALE (Figs 9 and 13)

Colouration similar to that of female, differing most noticeably in the possession of yellowish-white markings on the head and in the greater amount of that colour on the pronotum.

*Black*; whole of clypeus and labrum, occasionally one or two small spots within each ocular sinus, an antero-medially expanded narrow band along posterior margin of pronotum, occasionally a spot on humeral angles, occasionally small and diffuse postero-medial spots on tergites 2-5 or fewer (sometimes these spots are totally absent), *yellowish-white*; distal half of mandibles, whole of tegulae, extreme hind margin of scutellum laterally, tergite 1 (other than

anterior declivity), usually most of tergite 2, sometimes whole of tergite 3 or sometimes this tergite with only a laterally attenuated postero-medial transverse band (sometimes even this lacking), very occasionally median and lateral patches on tergite 4, extreme distal ends of femora and whole of tibiae and tarsi of all legs, *reddish-brown*.

Length 6,2–7,3 mm; length of fore wing 4,0–4,6 mm; hamuli 6–8.

Structure much like that of female, the differences between the sexes being the same as those given above for *C. wahlenbergiae* sp. nov.

Genitalia (Fig. 13); parameres wide and emarginate at their ends, furnished with long and strong inwardly directed curved hairs; each volsella with a longitudinal band of short strong hairs near inner margin; longitudinal hair bands on right and left volsellae opposing one another and together forming a double longitudinal band.

**MATERIAL EXAMINED:** Cape Province: Clanwilliam District, Klein Alexandershoek (32° 20' 20" S, 18° 46' E), 8–13.x.1987 (F. W. and S. K. Gess), 1 female Paratype and 3 male Paratypes (all on ground); same locality, 6.x.1988 (F. W. and S. K. Gess), Holotype female, Allotype male, 1 female Paratype and 6 male Paratypes (all in flowers of *Wahlenbergia* sp. B, Campanulaceae); same locality and date (D. W. Gess), 1 female Paratype and 2 male Paratypes; Clanwilliam District, 5 km W of Clanwilliam, road to Graafwater, 12.x.1987 (F. W. and S. K. Gess), 1 male Paratype (on ground).

**ETYMOLOGY:** The name, in the genitive singular, is formed from an anagram of the generic name, *Wahlenbergia* (Campanulaceae), of the plants in the flowers of which the wasp was commonly found foraging for nectar or nectar and pollen, or near which the wasp was commonly found resting on the ground, and serves to draw attention to both the floral association and the present wasp species' close resemblance to *C. wahlenbergiae* sp. nov.

*C. bergenwahliae* sp. nov. is superficially very similar to *C. wahlenbergiae* sp. nov. but is readily distinguishable in the female by the colour of the pronotum and scutellum (black, not reddish-brown), in both sexes by the puncturation of the frons (moderate and fairly close as in Figs 8 and 9, not fine and very sparse as in Figs 6 and 7) and by the form of the lateral projections of the ventral margin of the median part of the propodeum (Fig 12 as compared with Fig. 10), and in the male by the genitalia (Fig. 13 as compared with Fig.11).

#### *Celonites davidi* sp. nov.

##### MALE (Fig. 14)

*Black*; whole of clypeus, proximal half of labrum (distal half is unpigmented and translucent), spot on proximal half of mandibles, large median patch on frons above clypeus, patch entirely filling ocular sinus and extending upwards and downwards along portion of inner eye margin and mesad towards median frontal patch (but not meeting the latter), most of pronotum, narrow elongate marking margining anterior edge of mesopleura opposite pronotal lobes, a spot on tegulae anteriorly, a small spot on antero-lateral corners of scutellum opposite tegular ends, greater part of upper and lower faces of propodeal lamellae, postero-medial spots on tergites 1–6, elongate wedge-shaped postero-lateral markings on tergites 1–3, small spots on distal end of fore femora and proximal end of fore tibiae, *yellowish-white*; antennae (other than for 3 basal segments), distal half of mandibles, pronotal lobe and oblique longitudinal band on each side of pronotum, most of underside of pronotum, most of tegulae, most of scutellum,

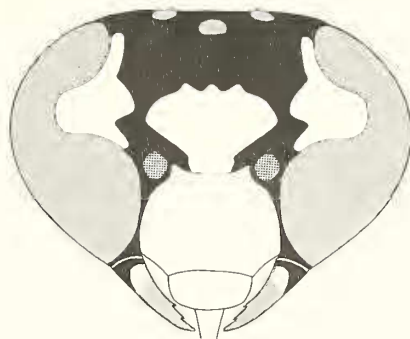


Fig. 14. *Celonites davidi* sp. nov.: frontal view of head of male to show colour pattern ( $\times 25$ ).

median part of metanotum, tergites (other than for above indicated pale markings), most of sternite 2 and parts of sternite 3 laterally, distal part of femora and whole of tibiae (other than for pale spots on fore legs) and tarsomeres 1-4, reddish-brown; coxae, trochanters, proximal part of femora and fifth tarsomeres, sternites (other than indicated above), dark brown.

Wings very lightly browned.

Length 6,5 mm; length of fore wing 3,8 mm; hamuli 6.

Head with surface of clypeus, frons and vertex shagreened, with puncturation of frons limited to area immediately adjacent to anterior ocellus where sparse and with that of vertex somewhat coarser and denser. Clypeus and frons unmodified, without any indication of keels.

Thorax and abdomen moderately to coarsely punctured; punctures weakest and least dense on pronotum, most pronounced and densest on mesonotum; punctures on scutellum and upper regions of mesopleura forming weak and very strong longitudinal striae respectively.

Propodeal lamella of each side wide, broadly truncate distally, with outer edge gently curved, separated from median part of propodeum by an inwardly curved slit ending in a relatively large circular emargination; lateral projection of ventral margin on each side of the median part of the propodeum with its hind edge transverse and its point bluntly rounded, wider than long, and projecting across opening of curved slit at level of end of lamella.

Abdominal tergites with posterior outer angles only moderately projecting; tergite 7 with hind margin gently curved and with small lateral emarginations.

FEMALE unknown.

MATERIAL EXAMINED: Cape Province: Namaqualand, Anenous (29° 14' 30" S, 17° 34' 45" E), 11-13.x.1988 (D. W. Gess), Holotype male (on ground).

ETYMOLOGY: The name, in the genitive singular, is formed from the name of the collector of the present specimen, Mr David W. Gess, in recognition of his enthusiastic and discriminating collecting over the years.

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REFERENCE

RICHARDS, O. W. 1962. *A revisional study of the Masarid wasps (Hymenoptera, Vespoidea)*. London: British Museum (Natural History).